Probability

To begin to deal with these questions, you first have to understand what probability is:

http://img.sparknotes.com/content/testprep/bookimgs/act/0016/chanceofa.gif

For example, let’s say you’re on a game show and are shown three doors. Behind one door there is a prize, while behind the other two doors sit big piles of nothing. The probability that you will choose the door with the prize is 1 /3, because out of the total three possibilities there is one chance to pick the lucrative door.

Here’s an example of a probability question:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| |  |  | | --- | --- | |  |  | |  | Joe has 3 green marbles, 2 red marbles, and 5 blue marbles. If all the marbles are dropped into a dark bag, what is the probability that Joe will pick out a green marble? | |

There are three ways for Joe to pick a green marble (since there are three different green marbles), but there are 10 total possible outcomes (one for each marble in the bag). Therefore, the probability of picking a green marble is:

http://img.sparknotes.com/content/testprep/bookimgs/act/0063/probbbb.gif

When you calculate probability, always be careful to divide by the total number of possible outcomes. In the last example, you may have been tempted to leave out the three chances of picking a green marble from the total possibilities, yielding the equation *P* = 3/7. If you did that, you’d be wrong.

Work out the following. (When necessary, give your answer in fractions eg. 2/5)

|  |  |
| --- | --- |
| 1. In a class of 40 students, 8 are in the science club and 12 are in the math club. If a student is selected at random, what is the probability that the selected student is:    1. in the science club?    2. in the math club? | 1. A two-digit number is written at random. Determine the probability that the number will be:    1. an odd number.    2. a multiple of 5. |
| 1. A bag contains 50 marbles, 28 red ones and 22 blue ones. A marble is picked at random from the bag. What is the probability of picking:    1. a red marble?    2. a blue marble?    3. a red marble after a blue marble had been picked first. | 1. In a group of 30 students, there are 14 girls and 4 of them can speak French. 6 of the 16 boys can speak French. If a student is selected randomly from the group, find the probability that the selected student:    1. can speak French.    2. is a boy.    3. is a girl who can speak French. |

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Work out the following. When necessary, give your answer in fractions eg. 2/5)

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| 1. In a class of 40 students, 8 are in the science club and 12 are in the math club. If a student is selected at random, what is the probability that the selected student is:    1. in the science club? (1/5)    2. in the math club? (3/10) | 1. A two-digit number is written at random. Determine the probability that the number will be:    1. an odd number. (1/2)    2. a multiple of 5. (1/5) |
| 1. A bag contains 50 marbles, 28 red ones and 22 blue ones. A marble is picked at random from the bag. What is the probability of picking:    1. a red marble? (14/25)    2. a blue marble? (11/25)    3. a red marble after a blue marble had been picked first. (4/7) | 1. In a group of 30 students, there are 14 girls and 4 of them can speak French. 6 of the 16 boys can speak French. If a student is selected randomly from the group, find the probability that the selected student:    1. can speak French. (1/13)    2. is a boy. (8/15)    3. is a girl who can speak French. (2/15) |